

### **REMARKS/ARGUMENTS**

Claims 1-18, 20-42, and 75-78 remain in this application. Claims 43-74 have been withdrawn as a result of an earlier restriction requirement. In view of the examiner's earlier restriction requirement, applicant retains the right to present claims 43-74 in a divisional application.

#### **§ 103 Rejections**

Applicants respectfully traverse the rejection of claims 1-18, 20-24, and 75-78 under 35 U.S.C. §103(a) as being unpatentable for obviousness over International Publication WO01/05724 A2 in light of "Synthesis and Characterization of Radiation Curable Polyurethanes Containing Pendant Acrylate Groups, Nagarajan et al (Nagarajan).

The Patent Office asserts that WO01/05724 teaches a radiation curable resin composition and optical fiber coated therewith, and that the coating is of the type contemplated by applicants comprising a methacrylate urethane compound having a molecular weight within applicants range and a  $T_g$  of less than about  $-30^{\circ}\text{C}$  as required by claims 1, 5-7, and 21.

Applicants respectfully disagree. There is no molecular weight requirement or  $T_g$  requirement at all in claim 1. However, claim 1 does require that the oligomer be formed from a reaction comprising a polyol having "m" hydroxyl functional groups, where "n" hydroxyl groups of said polyol are terminated in forming the oligomer and "m" > "n". There is no mention or suggestion in the '724 publication of forming the oligomer such that a percentage of the hydroxyl functional groups as required by claim 1 is formed. In fact, the Patent Office recognizes this, stating that "as to claims 3-4, and 24, the publication is silent as to "m" hydroxyl functional groups and "n" hydroxyl functional groups."

According to the Patent Office, Nagarajan teaches polyurethane acrylate radiation curable materials wherein the polyurethanes contain pendant secondary hydroxyl groups along the polymer chain without gel formation, as required by claims 3-4, 19, and 24.

Applicants respectfully disagree. Again, there is no mention or suggestion in the Nagarajan reference, as was the case in the WO/724 publication, of achieving the claimed ratio of terminated and non-terminated hydroxyl functional groups.

Applicants also disagree with the statement that "it would have been obvious to modify the teachings of the publication, by using the radiation curable coating, a polyurethane acrylate having pendant secondary hydroxyl groups as taught by Nagarajan with the reasonable expectation of obtaining an optical fiber coating that has high abrasion resistance, enhanced tensile strength of the cured composition." The only time a polyurethane with pendant hydroxyl groups is formed in the Nagarajan reference is before the composition is made radiation curable. The addition of the radiation curable component in Nagarajan results in capping of the hydroxyl groups on the polyurethane so that, when the radiation curable component is added, there are no free hydroxyl functional groups remaining. Thus, there are no free hydroxyl groups remaining in the radiation curable material disclosed in Nagarajan. Consequently, combining the references in the manner proposed by the Patent Office would not result in applicants' claimed invention, and indeed would seem to contradict the express teachings of the Nagarajan reference.

Applicants respectfully traverse the rejection of claims 1-9 and 25-42 under 35 U.S.C. 103(a) as being unpatentable for obviousness over Yamazaki et al, European Patent Publication EP 0874,012 A1 and U.S. 6,057,034 (hereinafter referred to collectively as Yamazaki) in light of "Synthesis and Characterization of Radiation Curable Polyurethanes Containing Pendant Acrylate Groups, Nagarajan et al (Nagarajan).

Yamazaki teaches a polyurethane (meth)acrylate oligomer obtained by subjecting (a) a polyisocyanate, (b) a polyol and (c) a methacrylate monomer containing a hydroxyl group to a urethanation reaction, wherein the ratio of NCO in (a) to OH in (b) is more than 3.0. Yamazaki p. 3, line 5-14. The NCO is in threefold excess of the OH in the urethanation reaction; therefore, virtually all of the polyol OH will be terminated in forming the oligomer (i.e., "m" = "n"). Yamazaki does not teach or suggest an oligomer having a substantial OH content, and therefore does not teach or suggest an oligomer having "m" greater than "n".

As explained above, the deficiency in Yamazaki is not defined by any of the teachings in Nagarajan.


In short, none of the references cited by the Patent Office, either alone or in combination, suggest utilizing an oligomer formed such that the majority of the hydroxyl groups of a polyol are terminated.

Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that no extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Robert L. Carlson at 607-974-3502.

Respectfully submitted,



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